

Work Order ID 83103

Thursday, April 12, 2012 4:01:34 PM

83103

Page 1

Item ID: D3699-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Support Assembly
 Start Date: 4/12/2012 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 4/26/2012 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: *P* Date: 12-04-12 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3699	Rev A								

100 0.00
100 FLOW WATER JET 4 0 Jm 12-6-15
 Waterjet Memo 0.00
 FLOW CNC Waterjet 1-Cut as per Dwg D3699Dwg Rev: A Prog Rev: A
 6061 . 0.00 ***grain direction along 9.00" *** 2- Deburr if necessary

110 0.00
110 QC2- Inspect parts off machine FAI/FAIB 4 0 Jm 12-6-15
 QC Memo 0.00
 Quality Control

120 0.00
120 QC8- Inspect parts - second check Scalio Sc
 QC Memo 0.00
 Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 83103

Thursday, April 12, 2012 4:01:34 PM

83103

Page 2

Item ID: D3699-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Support Assembly

Start Date: 4/12/2012 Start Qty: 4.00

4

Cust Item ID:

Required Date: 4/26/2012 Req'd Qty: 4.00

4

Customer:

Reference:

Run Start

NR1

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop

NR2

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

130

Brake NC

Brake NC

NC BRAKE

Memo

Bend as per Dwg D3697

0.00

0.00

(Handwritten: 4)

Sh n/6/15

140

140

QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

Sczba/15

(Handwritten: X4)

(Handwritten: 241)

150

150

Small Fab

Small Fab

Small Fab

Memo

I-counter sink holes as per dwg D3699

0.00

0.00

(Handwritten: 9/8)

(Handwritten: 12/06/12)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 83103

Thursday, April 12, 2012 4:01:34 PM

83103

Page 3

Item ID: D3699-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Support Assembly
 Start Date: 4/12/2012 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 4/26/2012 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

160	QC5- Inspect part completeness to step on W/O	0.00							
160									
QC	Memo	0.00		8/2/2019		(XG)			
Quality Control						7			

170	Chemical Conversion Coat per QSI005 4.1	0.00							
170									
HandFinish	Memo	0.00							
Hand Finishing						4			2/6/12/2019

180	Black Sandtex(Ref:4.3.5.7) per QSI005 4.3	0.00							
180									
Powdercoat	Memo	0.00							
Powder Coating	START TIME: 3:50								

FINISH TIME: 4:20

W12127a

ML
4X ✓ 12/06/19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 83103

Thursday, April 12, 2012 4:01:35 PM

83103

Page 4

Item ID: D3699-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Support Assembly

Start Date: 4/12/2012 Start Qty: 4.00

4

Cust Item ID:

Required Date: 4/26/2012 Req'd Qty: 4.00

4

Customer:

Reference:

Run Start

NR1

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Stop

NR2

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC3- Inspect Part Finish

0.00

190

QC

Memo

0.00

Quality Control

H ϕ BL 126-20

200

Pick Kit

0.00

200

Packaging

Memo

0.00

Packaging

4 ϕ 12/06/20

210

Small Fab

0.00

210

Small Fab

Memo

0.00

Small Fab

Assemble as per dwg D3699

4 ϕ 12/06/20

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 83103

Thursday, April 12, 2012 4:01:35 PM

83103

Page 5

Item ID: D3699-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Support Assembly

Start Date: 4/12/2012 Start Qty: 4.00

4

Cust Item ID:

Required Date: 4/26/2012 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220 *220* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00		512/04/26		44			
230 *230* Packaging Packaging	Identify as per dwg & Stock Location: <u>255</u> Memo	0.00 0.00				4			12/06/27AB
240 *240* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							12/6/28 JH MF 12-06-27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 12, 2012 4:01:38 PM

Page 1

Work Order ID: 83103

83103

Parent Item: D3699-041

D3699-041

Parent Item Name: Support Assembly

Start Date: 4/12/2012

Required Date: 4/26/2012

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:A 08-04-25 new issue DD verified by:ec
IPP Rev:B 08-07-14 revA as per dwg DD verified by:ec

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

MS20426AD3-3

Purchased

No

100

Each

3,817.000

2

8

MS20426AD3-3

Rivet

**

EB 12/06/26

Location

Loc Qty

Loc Code

ST316

3817

119109

655

121011

2727

19099

435

8

M6061T6S.050

Purchased

No

210

sf

245.7940

0.4569

1.923789

M6061T6S 050

6061-T6 .050 Sheet

**

Jm 12-6-15

Location

Loc Qty

Loc Code

021

144

1211920

144

MAT021

101.794

113216

10

114799

76.794

114993

15

114799

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 12, 2012 4:01:39 PM

Work Order ID: 83103

83103

Parent Item: D3699-041

D3699-041

Parent Item Name: Support Assembly

Start Date: 4/12/2012

Required Date: 4/26/2012

Start Qty: 4.00

Required Qty: 4.00

MS21059L3

Purchased

No

210

Each

262.0000

1

4

**

MS21059L3

Nut Plate

[Handwritten Signature]
4/26/2012

Location

Loc Qty

Loc Code

302		100
121185		100
ST301		28
118614		8
119546		20
ST302		134
120308		13
120833		21
121011		100

4

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	83103
Description: Support, LH		Part Number:	D3699-1
Inspection Dwg: D3699 Rev: A		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article**

 ☐ **Prototype**

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.098	+0.004/-0.001	0.098"	✓		✓	mmoi
Ø0.180	+0.005/-0.001	0.180"	✓		✓	"
Ø0.238	+0.005/-0.001	0.238"	✓		✓	"
Ø1.525	+0.012/-0.001	1.524"	✓		✓	"
0.36	+/-0.030	0.374"	✓		✓	"
0.62	+/-0.030	0.624"	✓		✓	"
0.96	+/-0.030	0.964"	✓		✓	"
2.21	+/-0.030	2.212"	✓		✓	"
4.12	+/-0.030	4.118"	✓		✓	"
8.95	+/-0.030	8.96"	✓		✓	Prod w/ 302
1.925	+/-0.010	1.928"	✓		✓	mmoi
8.61	+/-0.030	8.615"	✓		✓	Prod w/ 302
2.62	+/-0.030	2.625"	✓		✓	mmoi
0.344	+/-0.010	0.348"	✓		✓	"
0.688	+/-0.010	0.691"	✓		✓	"
0.64	+/-0.030	0.628"	✓		✓	"
2.66	+/-0.030	2.652"	✓		✓	"
5.75	+/-0.030	5.751"	✓		✓	"
6.41	+/-0.030	6.406"	✓		✓	"
0.300	+/-0.010	0.298"	✓		✓	"
0.923	+/-0.010	0.920"	✓		✓	"
0.050	+/-0.010	0.049"	✓		✓	"

Measured by:	Jm	Audited by:	S	Prototype Approval:	N/A
Date:	12-6-15	Date:	12/6/15	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	08.09.04	New Issue	P/O D3699-041	KJ/DD

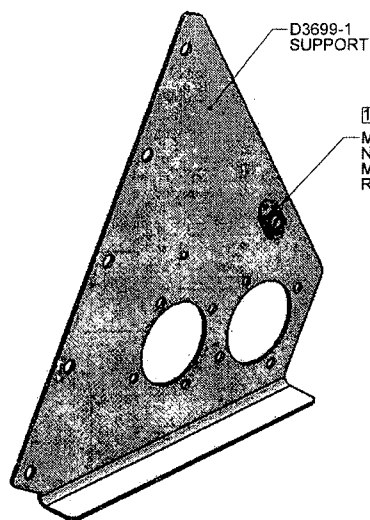
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

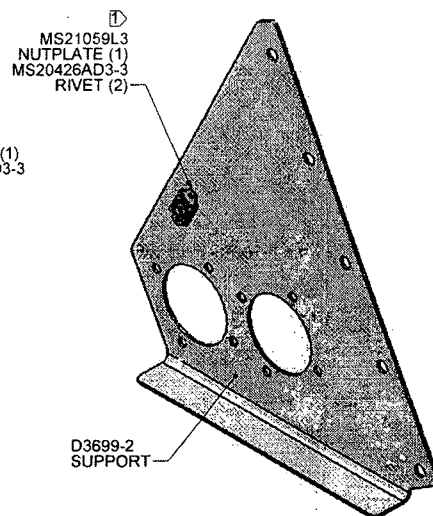
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D3699-041 SUPPORT ASSEMBLY



D3699-042 SUPPORT ASSEMBLY

NOTES:

- 1) INSTALL MS21059L3 NUTPLATE USING C'SINK Ø0.098 HOLES ON D3699-1/-2
- 2) IDENTIFICATION: IDENTIFY WITH DART ASSEMBLY P/N D3699-041/-042 & B/N USING FINE POINT PERMANENT INK MARKER
- 3) WEIGHT: 0.17 lb EACH

PART LIST

QTY -041	QTY -042	PART NUMBER	DESCRIPTION
X		D3699-041	SUPPORT ASSEMBLY
	X	D3699-042	SUPPORT ASSEMBLY
1		D3699-1	SUPPORT
	1	D3699-2	SUPPORT
1	1	MS21059L3	NUTPLATE
2	2	MS20426AD3-3	RIVET

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 88103

012-04-12

RELEASED
08.07.12

A	NEW ISSUE	RF	08.05.12
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>JH</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	<i>JH</i>		
CHECKED	<i>JP</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>JP</i>	D3699	SHEET 1 OF 2
APPROVED	<i>JP</i>	TITLE	SCALE
DE APPR.	<i>JP</i>	SUPPORT ASSEMBLY	NTS
DATE	08.05.12	COPYRIGHT © 2008 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

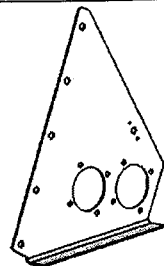
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

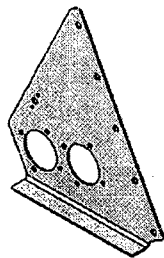
1.39

702

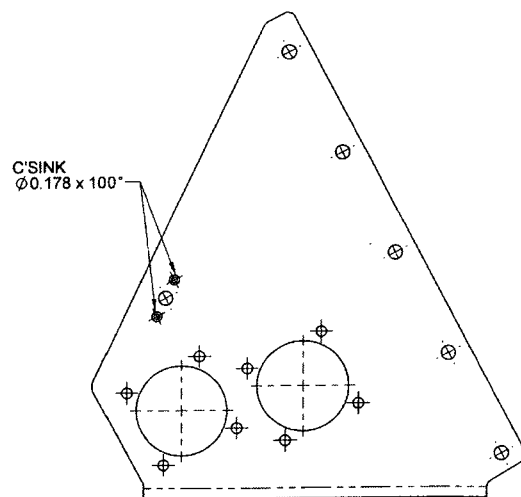
83103



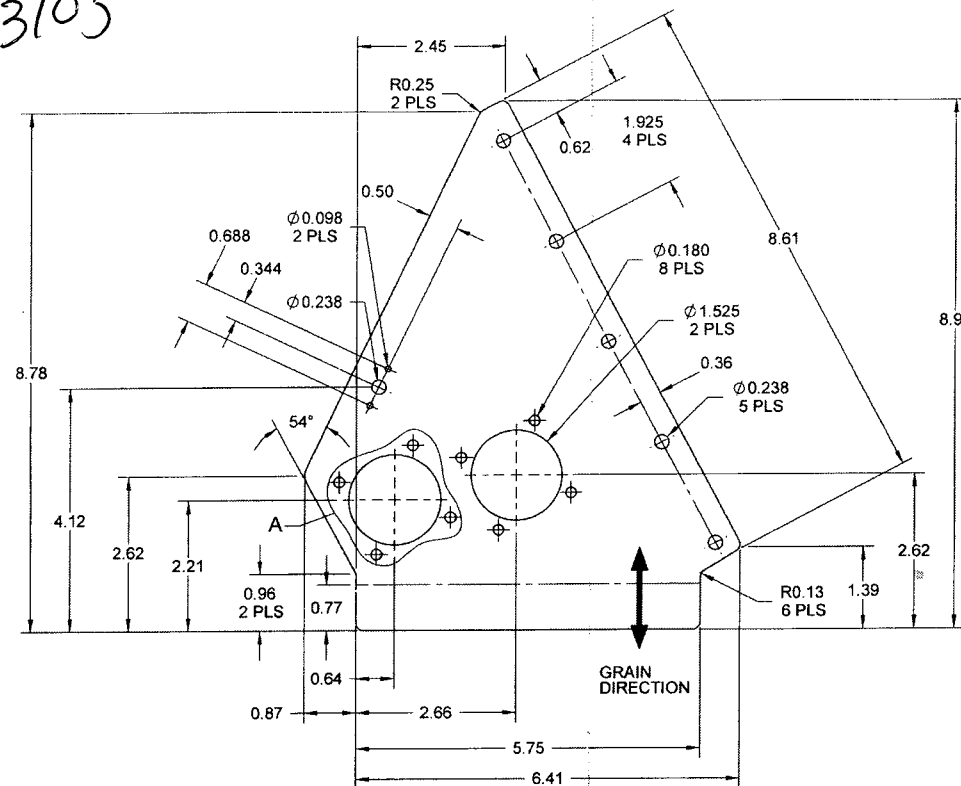
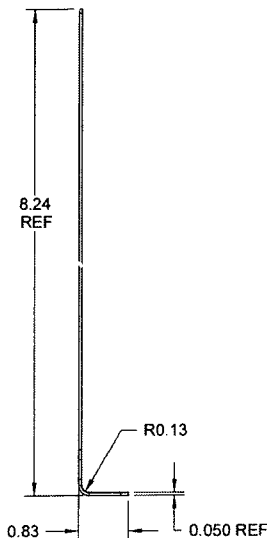
D3699-1 LH SUPPORT



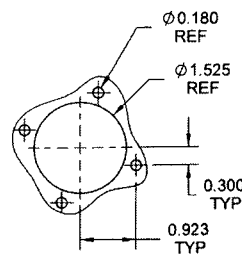
D3699-2 RH SUPPORT



**D3699-1 SUPPORT, LH SHOWN
(D3699-2 SUPPORT, RH OPPOSITE)
(MAKE FROM D3699-1F FLAT PATTERN)**



D3699-1F FLAT PATTERN



DETAIL A

RELEASED
04-07-05 1/1

NOTES:

- 1) MATERIAL: 2024-T3 (QQ-A-250/4) OR 6061-T6 (QQ-A-250/11) SHEET 0.050 THICK (REF. DART SPEC. M2024T3S.050 OR M6061T6S.050)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT BLACK (4.3.5.7) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.17 lbs

DESIGN	RF.	DART AEROSPACE LTD	
DRAWN	RF.	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D3699	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		SUPPORT ASSEMBLY	NTS
DATE	08.05.12	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries